

REMARKS

Claims 1 - 7, 9 - 21, 23 - 42, 44 - 47 and 51 - 53 remain pending in the present application. Applicants would like to thank the Examiner for indicating the allowance of claims 25 - 39 and 44 - 46. In view of the following remarks, it is respectfully submitted that all of the presently pending claims are in condition for allowance.

Claims 1 - 4, 6, 7, 9 - 21, 24, 40 - 42, 47 and 51 - 53 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Esser (U.S. Patent No. 6,096,040) in view of Kondo (U.S. Patent No. 3,779,240).

Claim 1 recites a plate for fixation of proximal humerus fractures comprising an elongated shaft portion and a head portion connected to the shaft portion and having a width greater than the width of the shaft, the head portion and the shaft portion defining a common longitudinal axis. The plate includes "at least one first screw hole in the head portion and at least one second screw hole located in the shaft portion, the at least one second screw hole having an elongated perimeter...*formed by first and second overlapping shapes of different size*. The plate further comprises a plurality of second screw holes in the shaft portion "symmetrically arranged about the common longitudinal axis" and a plurality of first screw holes in the head portion "asymmetrically arranged about the common longitudinal axis...*at least one of an upper surface and a lower surface of the bone plate [being] divided substantially in half by the common longitudinal axis, and wherein at least a first pair of the first holes is symmetrically disposed about the longitudinal axis, and at least a second pair of the first holes is asymmetrically disposed about the longitudinal axis.*"

Esser fails to teach or suggest a second screw hole wherein "*the elongated perimeter of the at least one second screw hole is formed by first and second overlapping shapes of different size,*" as recited in claim 1. The Examiner has cited Fig. 5 of Kondo to overcome this deficiency. (See 3/9/09 Office Action, pp. 5 - 6). However, it is respectfully submitted that the Examiner's assertion regarding the screw hole of Kondo is incorrect. Specifically, Kondo is directed to a hole 24 made up of a large circle *a* and a small circle *b* connected to one another by a pair of tangential lines *c* to form a pear shaped hole. (See Kondo, col. 2, ll. 49 - 54; col. 3, ll. 12 - 22; Fig. 2). The Examiner, however, has interpreted the hole 24 as being formed of first and second

overlapping ellipses. (See 3/9/09 Office Action, p. 6). Initially, it is respectfully submitted that the Examiner's interpretation constitutes an improper hindsight reconstruction of the Kondo device since Kondo does not teach or suggest the use of ellipses or the use of overlapping shapes anywhere in the disclosure. It is further submitted that the Examiner's reconstruction of the hole of Kondo still fails to meet the limitation of an "elongated perimeter of the at least one second screw hole [being] formed by first and second overlapping shapes of different size," as recited in claim 1. The Examiner has improperly used hindsight to construct a hole that does not resemble any hole taught by Kondo. Specifically, the Examiner fails to include the portion of the hole formed by tangential lines extending between the two shapes. It is therefore submitted that even if ellipses were used in place of circles, the modification would still require the use of tangent lines to form a perimeter of the hole in order. Neither Esser nor Kondo teach or suggest "a second screw hole wherein *"the elongated perimeter of the at least one second screw hole is formed by first and second overlapping shapes of different size,"* as recited in claim 1. It is respectfully submitted that claim 1 is allowable for at least this reason.

Furthermore, Esser fails to teach or suggest a bone plate that includes a plurality of first screw holes asymmetrically disposed within the head portion, with *"at least a first pair of the first holes [being] symmetrically disposed about the longitudinal axis,"* as recited in claim 1. The Examiner has cited holes 122 of Fig. 13 of Esser to overcome this limitation. (See 3/9/09 Office Action, pp. 3 - 4). However, it is respectfully submitted that none of the holes 122 are symmetrical across a longitudinal axis of the plate of Esser. Esser indicates that the holes 122 are oriented to form the outline of a triangle, wherein the holes being referred to by the Examiner in the Final Office Action are "aligned in a concave column." (See Esser, col. 8, ll. 38 - 47; Fig. 13; See Also 3/9/09 Office Action, p. 4). It is therefore evident that a first one of the holes 122 cited by the Examiner is clearly separated along a longitudinal axis from a second one of the holes 122 to form a substantially concave pattern, as is also evident in Fig. 13. (*Id.*). Kondo fails to cure this deficiency in Esser. It is therefore submitted that claim 1 is allowable over Esser and Kondo for at least this additional reason.

Esser also fails to teach or suggest a bone plate *"divided substantially in half by a common longitudinal axis,"* as recited in claim 1. As the Examiner has confirmed in the Final Office Action, the longitudinal axis of the plate of Esser extends centrally through the holes 48 of the shaft portion 32. (See Esser, col. 4, ll. 28 - 40; Fig. 2; See Also 3/9/09 Office Action, p. 4).

The bone plate 130 of Esser includes an oblong head portion 94 comprising a first and second head sections 114, 116, wherein the first and second head sections are shaped differently from one another. (See Esser, col. 9, ll. 44 - 64; Fig. 13). Thus, the head portion 94 of Esser is not divided in half by the longitudinal axis. (*Id.*) Specifically, the first head section 114 has a generally trapezoidal shape and extends laterally away from and generally perpendicular to the longitudinal axis while the second head section 116 has a generally curved shape and extends laterally away from a second side of the longitudinal axis. (*Id.*). Furthermore, the head section 114 extends proximally beyond the proximal end of the head section 116. It is therefore submitted that the bone plate 30 of Esser is not “divided substantially in half by the common longitudinal axis,” as recited in claim 1. Furthermore, it is respectfully submitted that the bone plate 30 of Esser can not be modified to meet the aforementioned limitation as Esser explicitly states that the curvature of the head portion is chosen to match the shape and contour of a head of an unfractured proximal humerus, which, as those skilled in the art will understand, is also not symmetrical across its longitudinal axis. (See Esser, col. 6, ll. 59 - 64). Kondo fails to cure this deficiency in Esser. It is therefore submitted that Esser and Kondo, taken either alone or in combination, fail to teach or suggest a bone plate “*wherein at least one of an upper surface and a lower surface of the bone plate is divided substantially in half by the common longitudinal axis,*” as recited in claim 1 and that claim 1 is allowable over Esser and Kondo for at least this additional reason.

In light of the above, it is respectfully submitted that neither Esser nor Kondo, taken alone or in combination, teach or suggest a bone plate for fixation of proximal humerus fractures comprising “an elongated shaft portion having a first width; a head portion connected to the shaft portion and having a second width greater than the first width, the head portion and the shaft portion defining a common longitudinal axis; at least one first screw hole located in the head portion; at least one second screw hole located in the shaft portion, the at least one second screw hole having an elongated perimeter; wherein at least one of the first and second screw holes is configured to engage a head of a bone screw to form an angularly stable connection with the bone screw and *the elongated perimeter of the at least one second screw hole is formed by first and second overlapping shapes of different size* and wherein the plate further comprises a plurality of first screw holes in the head portion, and a plurality of second screw holes in the shaft portion, wherein the plurality of second screw holes are symmetrically arranged about the common longitudinal axis and the plurality of first screw holes are asymmetrically arranged

about the common longitudinal axis *wherein at least one of an upper surface and a lower surface of the bone plate is divided substantially in half by the common longitudinal axis*, and *wherein at least a first pair of the first holes is symmetrically disposed about the longitudinal axis*, and at least a second pair of the first holes is asymmetrically disposed about the longitudinal axis,” as recited in claim 1 and that claim 1 is therefore in condition for allowance. Since claims 2 - 4, 6, 7, 9 - 21, 23 - 24, 40 - 42, 47 and 51 depend from and therefore include all of the limitations of claim 1, it is respectfully submitted that these claims are also allowable.

Claim 52 recites limitations substantially similar to those of claim 1 including a plate comprising “a head connected to a shaft and having a width greater than a width of the shaft, *the head and the shaft being substantially symmetrically divided by a common longitudinal axis*” and “a plurality of first screw holes extending through the head asymmetrically with respect to the longitudinal axis” in combination with “a plurality of second screw holes extending through the shaft substantially symmetrically with respect to the longitudinal axis, a first one of the second screw holes having *an elongated perimeter formed by first and second overlapping shapes of different size*, one of the first and second screw holes being configured to engage a head of a bone screw to form an angularly stable connection therewith.” It is therefore respectfully submitted that claim 52 and its dependent claim 53 are allowable for the same reasons stated above in regard to claim 1.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Esser in view of Kondo, in further view of Schafer (U.S. Patent No. 6,572,622).

Claim 5 depends from and, therefore, includes all of the limitations of claim 1. It is respectfully submitted that neither Esser nor Kondo nor Schafer, either alone or in any combination, teach or suggest the aforementioned limitations of claim 1. It is therefore respectfully submitted that claim 5 is allowable as being dependent on an allowable base claim.

It is therefore respectfully submitted that all of the presently pending claims are in condition for allowance. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

Dated: May 4, 2009

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